



***Schedule Incentives
Reinvention Team
Draft
Final Brief***

Team Leader: Mr. Floyd,
SMC/AXC



“Reducing the time to develop and field new weapons systems will not be easy, but it is a challenge that we must embrace.”

Gen Lester Lyles
VCSAF
Dec 1999

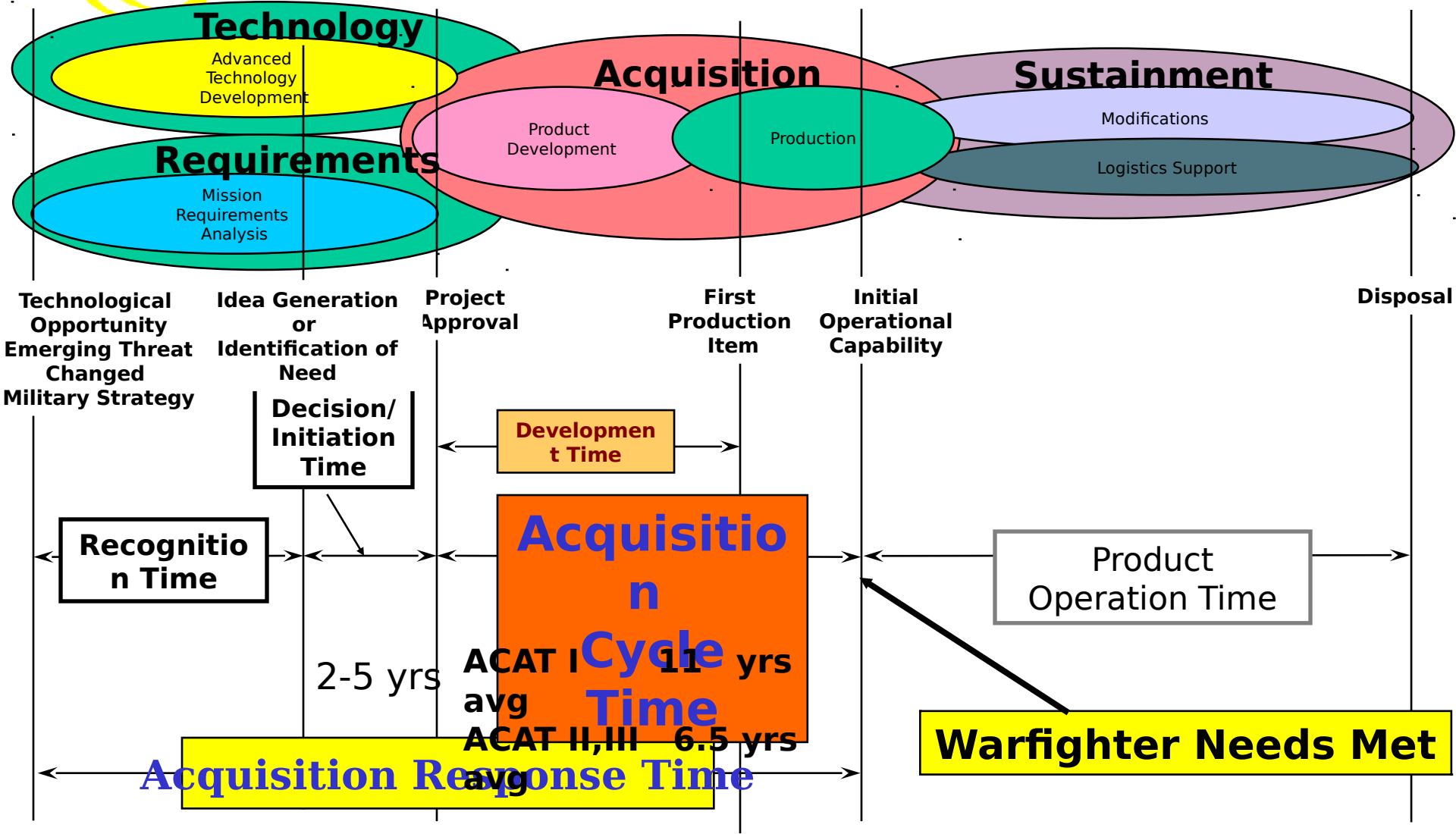


Overview

- Long development times and the Air Force Cycle Time Reduction Program
- Schedule incentives reinvention team overview
- Team findings and recommendation
 - (with in line supporting information)
- Conclusions



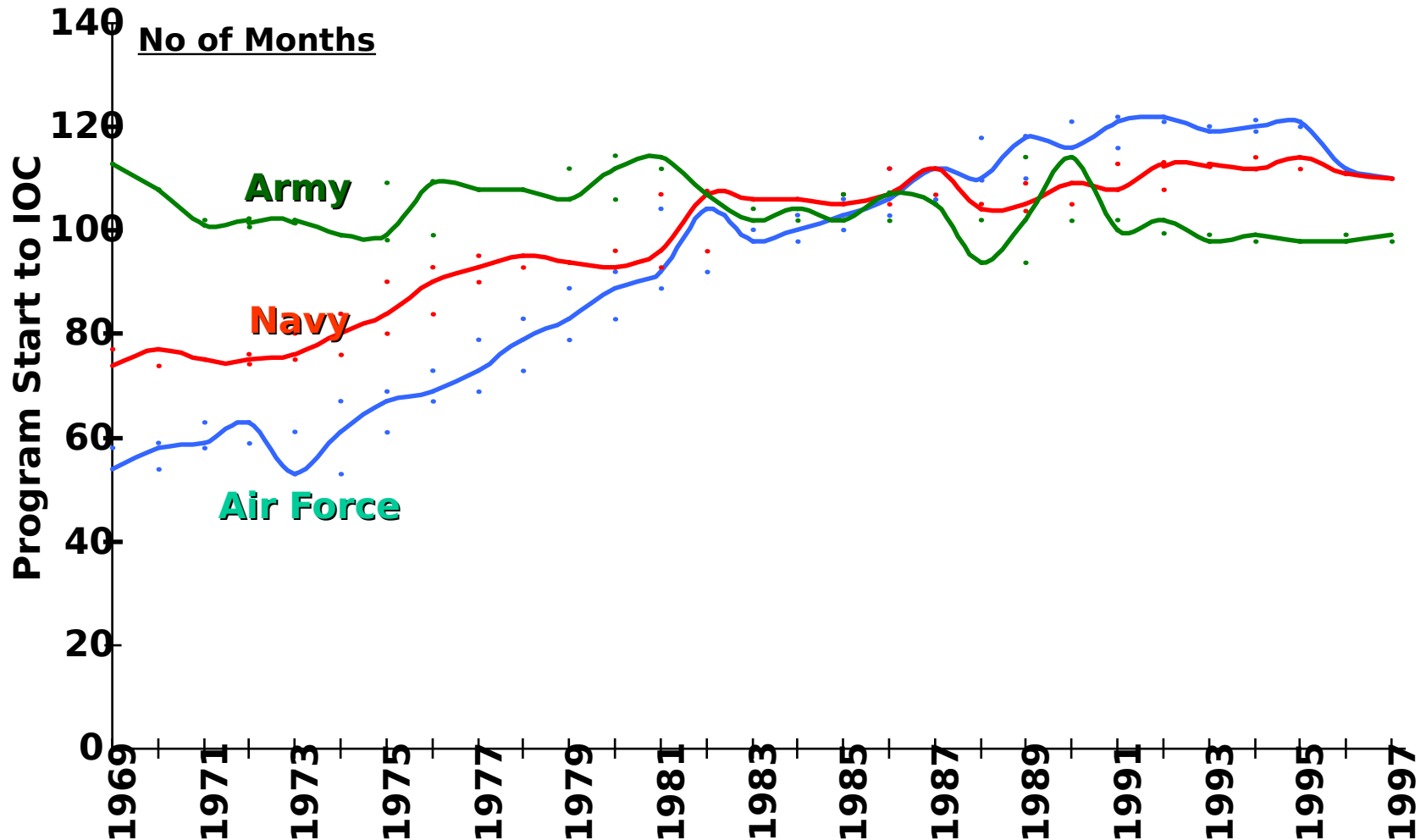
Acquisition Response Time





Average Cycle Times

(By SAR Reporting Years)



Source: DSB Briefing, Dan Czelusniak, 12 June 1998



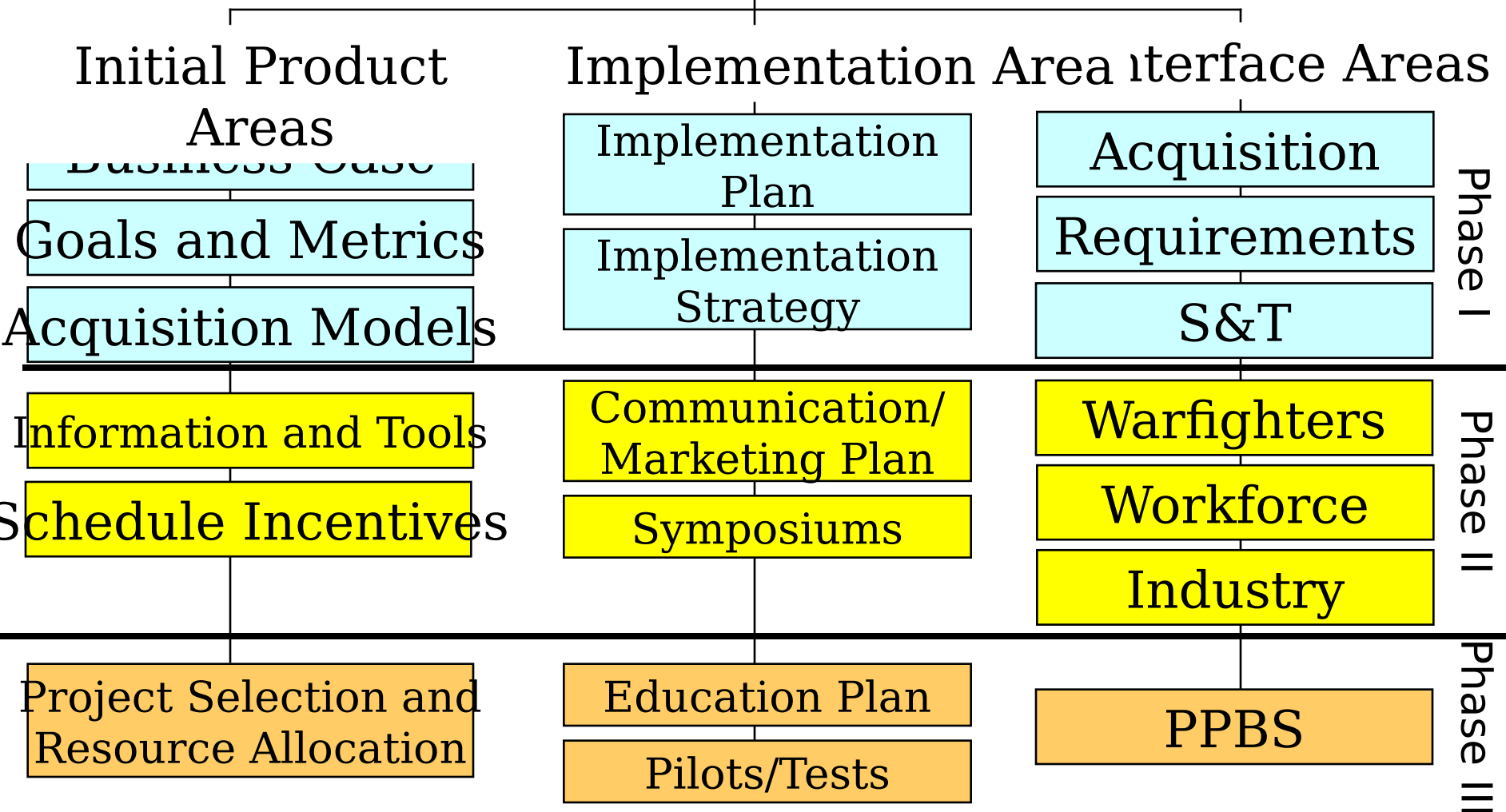
Problem Statement

- Developmental cycle times for AF projects and systems have gone from long to longer
- Impact to AF
 - System not available to warfighters to meet threat
 - System mismatch to changing threat
 - Technology embedded in system is obsolete
 - Part lines kept open only for end item
 - Funding
 - Longer programs spend more money on development costs
 - Longer programs have a greater chance of program cancellation



AF Cycle Time Reduction Action Plan

CTR Action Plan





II)

Schedule Incentives

Develop Methods to Provide Incentives That Encourage Cycle Time Reduction

It is essential align personal and organizational incentives with cycle time reduction

Potential Tasks:

- 5.1 Develop Incentives for Cycle Time Reduction within the Government (Service, Program Office, Test, Oversight Agencies)**
- 5.2 Develop Incentives for Cycle Time Reduction for Contractors**
 - 5.2.1 Make the length of the development schedule and the associated risk a significant source selection criteria**
 - 5.2.2 Provide significant schedule-based contract incentives to meet and reduce the schedule**



“The Air Force action plan includes: . .

.
Providing effective incentives for government personnel and contractors to reduce development time where appropriate and advantageous”

Gen Lester Lyles
VCSAF
Dec 1999



AF Schedule Incentives Reinvention Team

- Approved by AF Acq Ref Leadership Council (Jan 99)
- Looking at program office and contractor incentives to shorten project schedules
 - During pre-award phase
 - During execution phase
 - Develop range of options from which project offices and contractors can propose based on project specifics
- Led by Space and Missile Center
 - Mr Bill Floyd SMC/AXC - Team Leader
 - Mr Maikisch SMC/CD - Champion



Need Statement

- Restore balance among program elements of cost, schedule, and performance
- Effective schedule incentives are required to:
 - Motivate AF and industry to shorten developmental cycle times
 - Need industry to propose shortened schedules
 - AF needs to place greater emphasis on shortened schedules

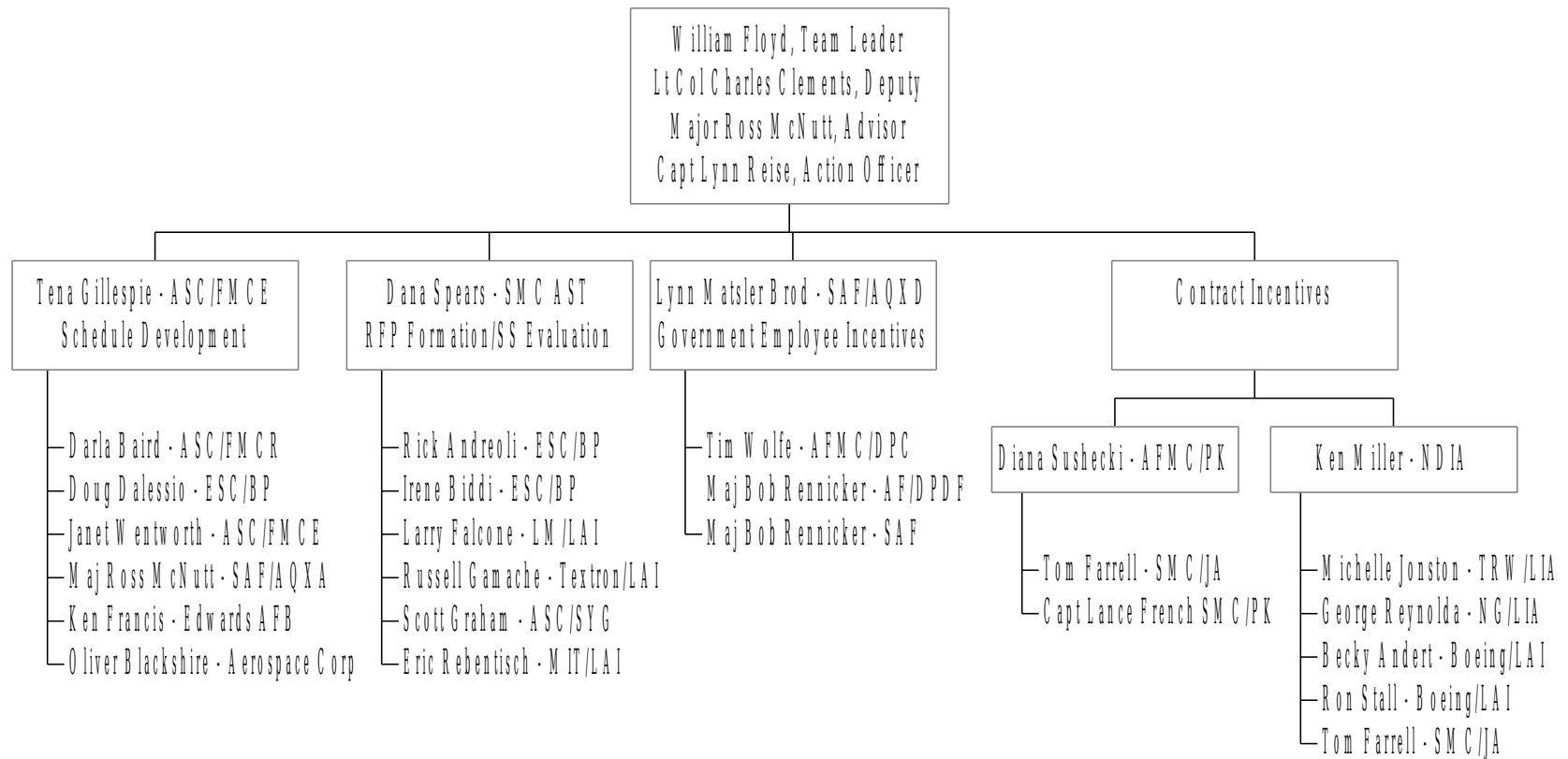


Team Investigation

- Assess Mechanisms for Pre-RFP Schedule Development - Sub-Team 1: Tena Gillespie
- Explore Source Selection Evaluation Techniques - Sub-Team 2: Dana Spears
- Evaluate Contractual Schedule Incentives - Sub-Team 3A: Ken Miller & Diana Suchecki
- Explore Incentives for Government Employees - Sub-Team 3B: Lynn Matsler Brod



The Team





Team Efforts

- Supported DSMC Alumni Symposium - incentives development
- Hosted NDIA industry workshop
- Conducted product and logistics center PK survey
 - Schedule contract incentives
- Conducted program product survey
 - Schedule development
- Engaged commercial consultants - Don Reinertsen - pro bono
- Cost of Delay Analysis - SAF/AQ effort
- Schedule tools reinvention team
- ASC cost and schedule workshop
- Contracting Officer working group
- Contractor incentive working group



Draft Overall Team Findings

1. The value of time is most often unknown for a project
2. There is little emphasis placed on schedule development, management, and incentives on our projects
3. There is a significant lack of knowledge of schedule development, management, and incentives issues
4. There is no center, AFMC, AF or DoD organization responsible for schedule-related issues
5. Schedule plays little or no role in source selection decisions
6. The AF provides few effective schedule-related incentives once on contract
7. The AF provides few incentives to government employees to reduce schedules
8. There are many other problems that must be addressed before cycle times will be reduced



Draft Overall Team Recommendations

1. Determine the value of time on each project
2. Increase the emphasis on schedule development, management, and incentives
3. Significantly increase knowledge of schedule development, management, and incentives
4. Establish AF advocate and OPR for schedule issues at center, AFMC, and SAF
5. Increase importance and weight of schedule in source selection--length and risk
6. Provide effective and appropriate incentives to shorten development time once on contract
7. Provide effective and appropriate incentives to government workforce
8. Address the other problems beyond the scope of this team
 - Funding levels and stability
 - Requirements stability
 - Other issues



Team Finding #1

The Value of Time is Most Often Unknown for a Project

The team found:

- Value of time on a development project is not intuitive - but is calculable
- Little analysis is typically done regarding impact of schedule on program value or cost
- People's assumptions of the value of time vary by factors of 50 to 100 on same project - Leads to inconsistent decisions
- Understanding the value of time is critical when making cost, schedule, and performance tradeoff
- Understanding the value of time for each project is critical to making reasoned portfolio decisions
 - New starts
 - Funding allocations/reallocations - budget cuts



Team Recommendation #1

Determine the Value of Time for Each Project

Recommendations:

- Use Cost of Delay Analysis (CODA) to objectively determine value or cost of time
 - Long history of use in the commercial world - since 1983
 - Adapted by SAF/AQ for use with defense projects
 - Directed by Dr. Gansler in 8 Jul 99 letter and accepted by AF through Gen Lyles' response dated 31 Aug 99
- Require review of CODA and Tactical Decision Rules at program/milestone reviews and decision points
 - Provides objective standard with which to make project and portfolio decisions
 - Reduces impacts of differing assumptions as to the value of time



There is Little Emphasis Placed on Project Schedule Development, Management, and Incentives

The team found:

- Scheduling does not appear to be seen as a core program management function
- Schedule widely considered by PM and PEMS to be 4th of 4 in project objective priority
- Schedule is first aspect sacrificed due to unforeseen events
- Schedules primarily determined by expected budget allocation, not by developmental requirements
- Few incentives placed on meeting or beating the project schedule
 - Over 90% of our contracts contain no schedule incentives
- Little or no emphasis placed on schedule in acquisition-related courses
- Little reference material available for schedule development and management
- Little review of proposed schedules other than for budgetary reasons
- Little rigor or analysis used in schedule development - gantt or milestone charts



There is Little Emphasis Placed on Project Schedule Development, Management, and Incentives

Impact:

- Proposed schedules not based on developmental requirements - based on expected funding
- Schedules are highly uncertain and unstable - little emphasis on accuracy and reliability - “likely to change anyway”
- Most government project schedules use only gantt or milestone charts
 - Not enough detail for programmatic decisions
- Little reference material for schedule and schedule development
- Scheduling expertise lost due to draw down, cost focus



Increase the Emphasis on Schedule Development, Management, and Incentives

Recommendations:

- Explicitly make scheduling a core program management responsibility
 - Proper schedule management is critical to meeting cost, schedule, and performance objectives
 - Hold the program manager responsible for schedule management
- Develop a “should take” schedule based on the developmental requirements to determine optimal development time
 - Referred to Schedule Development and Evaluation Tools Reinvention Team - Led by ASC Mr. Mike Welch



Increase the Emphasis on Schedule Development, Management, and Incentives

Recommendations Continued:

- Incorporate requirement for Master Program Schedules (MPS) in DoD 5000.2R
 - MPS is a critical program management tool
 - Should be included as a subparagraph under para 2.5 (Program Management)
 - Based on Integrated Master Plan (IMP) events
 - Include all government and contractor activities
 - Develop early, with industry involvement
 - Baselines program plans, status, and progress
 - Provides basis for resource analysis
 - Provides basis for cost/performance/schedule trade-offs



Proposed DoD 5000.2R MPS Wording

Include in Section 2.5, Acquisition Strategy, Cost, Schedule, and Performance Risk Management

Master Program Schedule

The program manager shall maintain a master program schedule (MPS) that lays out the events, activities and milestones required to develop, produce and field the system. This MPS is based on the major program milestones and events and expands them to the appropriate activity level of detail for the entire program. The MPS should be developed with input from industry to the maximum extent possible, early in the program planning process. The MPS is a critical program management tool that provides a basis for effective communication, serves as a baseline for program plans, status, and progress, and provides a basis for resource analysis, exploration of alternatives and cost/performance/schedule tradeoff studies. No specific format or scheduling technique is prescribed.

The MPS will have the following characteristics:

- 1.) It must be consistent with the program work breakdown structure (see 5.3.2);
- 2.) It must be detailed sufficiently by knowledgeable and experienced people, so that critical and high risk efforts are identified as realistically as possible even though it may be developed very early in the program's life cycle. It will be extended and expanded as the program unfolds and additional insight is needed (for example, at the award of a contract);
- 3.) It must include the efforts of all activities, both government and contractor; and it must reflect a current, integrated view of the program that is consistent with resource plans, contract management reports, and other approved program documentation.
- 4.) It must reflect those risks identified and documented in the risk management plan (see 2.4).



Increase the Emphasis on Schedule Development, Management, and Incentives

Recommendations Continued:

- Explicitly review program schedules and incentive strategies during initial Acquisition Strategy Panel
 - Cost of Delay Analysis
 - Estimated schedule ranges
 - Schedule incentive strategies
- Develop project schedule development and evaluation tools to assist in project scheduling
 - Underway - being accomplished by Schedule Development and Evaluation Tools Reinvention Team



Need to Increase Emphasis on Schedule Development, Management, and Incentives

- Recommendations Continued:
 - Add schedule metrics to portfolio reviews
 - What gets measured gets attention - Increase visibility of schedule issues
 - Allow more effective and knowledgeable portfolio management
 - Schedules are not currently monitored or tracked at high levels
 - Lowest priority of program managers, PEMs
 - Little accountability
 - Encourages logical tradeoffs and decisions
 - Provides common understanding of the value of time



There is a Significant Lack of Knowledge of Schedule Development, Management, and Incentives Issues

The team found:

- Significant loss of schedule-related expertise
 - Both government and industry
 - All but eliminated scheduling career field
- Inexperienced workforce has greater need for training and documentation of procedures
- Little or no emphasis placed on schedule in acquisition-related courses - removed to shorten course length
- No required course devoted to schedule management issues
- Little or no reference material for schedule issues
 - No AF guidance on schedule development, management, and incentives
 - No historical libraries or databases (except ASC) from which to pull data
 - DoD/NASA Incentives Guide has not been updated since 1969



Significantly Increase Knowledge of Schedule

Development, Management, and Incentives

Recommendations:

- Publish AF Guide to the Development and Management of Program Schedules
 - Assists project and program managers in developing, evaluating, and managing project schedules
 - Detail information on scheduling and schedule-related issues
 - In final draft form - developed by this team - **DONE**



Significantly Increase Knowledge of Schedule

Development, Management, and Incentives

Recommendations Continued:

- Develop scheduling courses at DAU and DSMC
 - Based on AF Guide to the Development and Management of Program Schedules
 - Grow organic capability through:
 - DSMC Program Manager course
 - DAU ACQ 200 and 2xx courses
 - AF Systems Acquisition School
 - Satellite/distance learning courses
 - Road show teams for AFMC centers, depots, and industry



Significantly Increase Knowledge of Schedule

Development, Management, and Incentives

Recommendations Continued:

- Update the 1969 DoD/NASA Incentives Guide
 - Establish government/industry IPT
 - Need to incentivize contractors to produce shorter program schedules
 - Include information from 1999 Army “Study of Innovation in Contractual Incentives” commissioned to improve business relationships by effectively applying contractual incentives
 - Include DSMC’s draft incentives guide



No Center, AFMC, AF, or DoD Organization is Responsible for Schedule-Related Issues

The team found:

- No one currently responsible for schedule development, management, and incentives policy or training
 - Delegated to contractor
- Little organic capability to analyze and oversee contractor efforts
- No standardized location for schedule development, management, or incentives responsibility
- Need organizational advocate for scheduling issues
- Schedules primarily used to report what has happened, not to develop plans for what may happen



Team Recommendation #4 Establish AF Advocate and OPR for Schedule Issues at Center, AFMC, and SAF

Recommendations:

- Policy issues: SAF/AQX
 - Develop and issue policy on scheduling and schedule incentives
 - Advocate scheduling issues up to DoD level
 - Develop and implement marketing and awareness plan



Team Recommendation #4

Establish AF Advocate and OPR for Schedule Issues at Center, AFMC, and SAF

Recommendations Continued:

- Implementation: AFMC/DRx

- Stand up new office with funding and manpower slots from SAF/AQ
- Maintain AF Guide to the Development and Management of Program Schedules
- Sponsor training program development
- Implement CODA integration
- Support Acquisition Support Teams (ASTs) to enhance early program planning
- Support development of scheduling expertise at the centers



Team Recommendation #4

Establish AF Advocate and OPR for Schedule Issues at Center, AFMC, and SAF

Recommendations Continued:

- Center-level Implementation: Program Management
 - Currently, no standard functional POC for scheduling
 - ASC: Scheduling resides in FM
 - Schedules under-developed and under-maintained
 - Consider increasing center-level manning
 - Critical job not getting done with current manning levels
 - Support development of scheduling expertise at the centers
 - Schedules under-utilized in our acquisition process
 - Schedule does not play a role in approximately 40% of our acquisitions
 - Recommend program management function be assigned
 - ASC - SY
 - SMC - AX
 - ESC - BP



Team Finding #5

Schedule Plays Little or No Role in Source Selection Decisions

- The team found:
 - Contractors bid exactly what the government asks for
 - “Telling the government they are wrong is not a winning strategy”
 - Contractors have no incentive to propose alternate schedules
 - 80% of projects specify expected schedule to contractor
 - Schedule is not reported to be a significant source selection criteria
 - Few alternate proposals are ever received
 - Seen as wishy washy on contractor part - “can’t make a decision”
 - Cost more to develop
 - Primary proposal must be competitive to even be considered
 - Government often says they will not be considered
 - Contractor proposed schedules based solely on government expected schedule
 - Not development related requirements - shorter or longer
 - Contractor who do bid different schedules seen as nonresponsive
 - Schedule buried under performance risk - one of many factors



Team Finding #5

Schedule Plays Little or No Role in Source Selection Decisions

- Issues:
 - To get contractors to bid “best value” or “most appropriate” schedules must make it a significant part of source selection criteria
 - Object is to win the contract
 - Must weigh both schedule length and risk to balance incentives
 - Avoid “buy in”
 - Must be able to place a value on time and must share that value with contractors in order to get “best value” proposals
 - Must have ways to evaluate different schedules for value and risk quickly in source selection environment



Increase Importance and Weight of Schedule

in Source Selection -- Length and Risk

- Recommendations:
 - Make schedule an optional source selection factor
 - Determine relative importance based on program requirements
 - Like cost and performance
 - Requires change to AFFARS - not FAR or law
 - FAR 15.304(b) allows schedule to be a factor
 - AFFARS 5315.304(c) restricts factors to mission capability, cost or price, past performance, and proposal risk
 - Increase breadth and depth of pre-RFP discussions
 - Present time-adjusted value along with cost and risk-adjusted cost to Source Selection Authority
 - Adjust proposal cost by cost of delay to determine adjusted value



Team Recommendation #5

Increase Importance and Weight of Schedule

in Source Selection -- Length and Risk

- Recommendations Continued:
 - Develop evaluation tools to support source selection teams
 - Referred to Schedule Development and Evaluation Tools Reinvention Team
 - Develop contract schedule-incentive structure to be used during contract execution prior to source selection.
 - Ensures contractors live up to bid schedules - reduces buy in
 - Identifies contractor and government share of schedule risk
 - See recommendation 6 for contract incentives options



The Air Force Provides Few Effective Schedule-Related Incentives once on Contract

- Team Found:
 - Very few contracts contain any schedule related incentives
 - Either to meet or beat schedule
 - Most incentives that are provided are only a small part of an award fee pool
 - Center PK Survey showed very few mechanisms are used to provide schedule-related incentives
 - Product centers reported only 7 examples of schedule incentives
 - Log centers report only award fee used
 - Award fee is the most often used - 93% average irrespective of schedule performance
 - Vast majority of contractors report no incentive to exceed any of the project objectives - cost, schedule, or performance, or ops & maintenance



The Air Force Provides Few Effective Schedule-Related Incentives once on Contract

- Team Found:
 - There are many possible ways to provide incentives
 - Key is increased economic value to contractor
 - Money talks louder than words - highest rated incentives
 - Total profit
 - Cash flow
 - Future sales
 - Lowest rated incentives include empowerment, partnering, publicity
 - Different companies want different things - must be tailored
 - Cash flow, total profit, more work - depending on state of company
 - Cost and value of incentives are not symmetrical
 - Can find win-win scenarios - loan guarantees, for example



Provide Effective and Appropriate Incentives to Shorten Development Time Once on Contract

- Recommendations:
 - Develop menu of pre-approved schedule-related incentives for program offices and contractors to use
 - Pre-approved contract language removes uncertainty
 - Approve first list of proposed contract incentive language - included in Schedule Guide - See recommendation 3
 - Eliminate barriers to additional identified incentives
 - Provide range of acceptable options in draft RFP and RFP
 - Allow/require contractors to propose specific incentives as part of their proposal
 - Review incentives approach during Acquisition Strategy Panel
 - See recommendation 2



Provide Effective and Appropriate Incentives to Government Workforce

- The team found:
 - Leadership focuses primarily on cost and performance
 - Shortening schedules seen as 4th of 4 project objectives
 - Lack of leadership attention to schedules - as long as you meet your current one
 - Schedules seen as reporting progress - not anticipating problems
 - Loss of accountability
 - Long project schedules means lots of project managers
 - Rapid project manager turnover - average 18 months on the job
 - Performance reviews are driven by other factors - office parties - not project performance
 - Few award programs weigh schedule management as a factor
 - No awards for early completion
 - Very few team awards



Provide Effective and Appropriate Incentives to Government Workforce

- Issues:

- What gets measured and reported gets attention
- There are few schedule metrics used in reviews
 - Primary focus is cost and performance
- Product development is a team effort - government/contractor/supplier
 - Need to establish team goals and focus on team accomplishments
- In providing incentives to government employees - money talks ...
- Barriers to providing military dollars - may be ways around



Team Recommendation #7

Provide Effective and Appropriate Incentives to Government Workforce

- Recommendations:


- Require schedule metrics during program reviews for all projects - original, current plan, current estimate
 - PEO/DAC portfolio reviews
 - Distribution of projects by project schedule performance
- Enhance awards program - focus on meeting and beating schedule
 - Increase awareness of existing awards programs - documented in Schedule Guide - see recommendation 2 - **DONE**



Team Recommendation #7

Provide Effective and Appropriate Incentives to Government Workforce

- Recommendations Continued:
 - SAF letter encouraging use of incentives
 - Let supervisors know that they should reward people for doing their primary job well
 - Low or no cost way to reward top performers
 - Establish team cash awards for beating schedule
 - Government and industry teams should share awards
 - Allow military to share in team cash awards - requires change in law
 - Allow use of Form 1000 and AF Idea program for schedule reductions
 - Up to 3% of savings allowable - military eligible
 - Savings determined by cost of delay



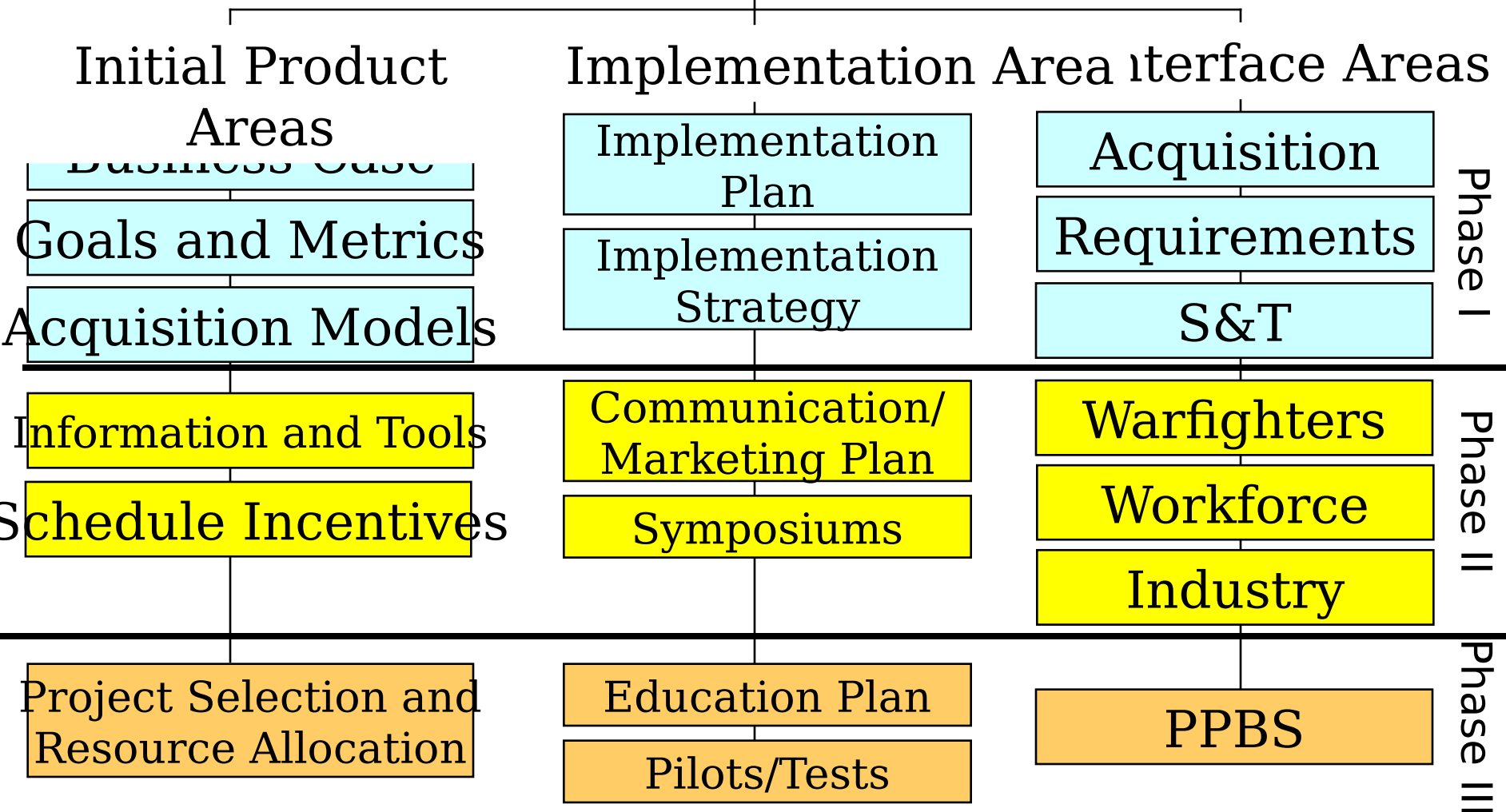
There are Many Other Problems that Must be Addressed Before Cycle Times will be Reduced

- Proper scheduling and schedule incentives are only one part of the solution
 - Funding levels
 - Funding instability
 - Requirement changes
 - Portfolio management practices - too many ongoing projects
- Many of these areas are already being addressed at AF levels as part of AF Cycle Time Reduction Action Plan



AF Cycle Time Reduction Action Plan

CTR Action Plan





Conclusions

In order to provide proper incentives to government and contractor personnel, we must:

1. Determine the value of time
2. Increase the emphasis on schedules
3. Increase knowledge of schedules
4. Establish AF OPRs for schedule issues
5. Increase weight of schedule in source selection
6. Provide effective incentives once on contract
7. Provide effective incentives to government workforce
8. Address the other problems beyond the scope of this team
 - Funding levels and stability
 - Requirements stability
 - Other issues



“ . . . and miles to go before I
sleep.”

Robert Frost